



1600

RAW SEQUENCE LISTING

DATE: 04/24/2003

PATENT APPLICATION: US/09/932,812A

TIME: 14:40:01

Input Set : A:\EP.txt

Output Set: N:\CRF4\04242003\I932812A.raw

3 <110> APPLICANT: Sun, Lee-Hwei K
 4 Sun, Bill N
 5 Sun, Cecily R
 7 <120> TITLE OF INVENTION: Fc fusion proteins of human erythropoietin with increased
 biological
 8 activities
 10 <130> FILE REFERENCE: 02SUN2001
 12 <140> CURRENT APPLICATION NUMBER: 09/932812A
 13 <141> CURRENT FILING DATE: 2001-08-17
 15 <160> NUMBER OF SEQ ID NOS: 28
 17 <170> SOFTWARE: PatentIn version 3.1
 19 <210> SEQ ID NO: 1
 20 <211> LENGTH: 29
 21 <212> TYPE: DNA
 22 <213> ORGANISM: Artificial Sequence
 24 <220> FEATURE:
 25 <223> OTHER INFORMATION: PCR primer
 27 <400> SEQUENCE: 1
 28 cccaagcttg gcgcggagat ggggggtgca 29
 31 <210> SEQ ID NO: 2
 32 <211> LENGTH: 27
 33 <212> TYPE: DNA
 34 <213> ORGANISM: Artificial sequence
 36 <220> FEATURE:
 37 <223> OTHER INFORMATION: PCR primer
 39 <400> SEQUENCE: 2
 40 cggatccgtc ccctgtcctg caggcct 27
 43 <210> SEQ ID NO: 3
 44 <211> LENGTH: 20
 45 <212> TYPE: DNA
 46 <213> ORGANISM: Artificial Sequence
 48 <220> FEATURE:
 49 <223> OTHER INFORMATION: PCR primer
 51 <400> SEQUENCE: 3
 52 gagcgcaaat gttgtgtcga 20
 55 <210> SEQ ID NO: 4
 56 <211> LENGTH: 28
 57 <212> TYPE: DNA
 58 <213> ORGANISM: Artificial Sequence
 60 <220> FEATURE:
 61 <223> OTHER INFORMATION: PCR primer
 63 <400> SEQUENCE: 4
 64 ggaattctca tttaccgga gacagga 28
 67 <210> SEQ ID NO: 5

Does Not Comply
Corrected Diskette Needed

P.6

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68 <211> LENGTH: 29
69 <212> TYPE: DNA
70 <213> ORGANISM: Artificial Sequence
72 <220> FEATURE:
73 <223> OTHER INFORMATION: PCR primer
75 <400> SEQUENCE: 5
76 tggttttctc gatggaggct gggaggcct                29
79 <210> SEQ ID NO: 6
80 <211> LENGTH: 29
81 <212> TYPE: DNA
82 <213> ORGANISM: Artificial Sequence
84 <220> FEATURE:
85 <223> OTHER INFORMATION: PCR primer
87 <400> SEQUENCE: 6
88 aggcctccca gcctccatcg agaaaacca                29
91 <210> SEQ ID NO: 7
92 <211> LENGTH: 69
93 <212> TYPE: DNA
94 <213> ORGANISM: Artificial Sequence
96 <220> FEATURE:
97 <223> OTHER INFORMATION: PCR primer
99 <400> SEQUENCE: 7
100 cggatccggt ggcggttccg gtggaggcgg aagcggcggg ggaggatcag agcgcaaag 60
102 ttgtgtcga                                     69
105 <210> SEQ ID NO: 8
106 <211> LENGTH: 21
107 <212> TYPE: DNA
108 <213> ORGANISM: Artificial Sequence
110 <220> FEATURE:
111 <223> OTHER INFORMATION: PCR primer
113 <400> SEQUENCE: 8
114 gagtccaaat atggtccccc a                        21
117 <210> SEQ ID NO: 9
118 <211> LENGTH: 28
119 <212> TYPE: DNA
120 <213> ORGANISM: Artificial Sequence
122 <220> FEATURE:
123 <223> OTHER INFORMATION: PCR primer
125 <400> SEQUENCE: 9
126 ggaattctca tttaccaga gacaggga                28
129 <210> SEQ ID NO: 10
130 <211> LENGTH: 21
131 <212> TYPE: DNA
132 <213> ORGANISM: Artificial Sequence
134 <220> FEATURE:
135 <223> OTHER INFORMATION: PCR primer
137 <400> SEQUENCE: 10
138 cctgagttcg cggggggacc a                        21
141 <210> SEQ ID NO: 11

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142 <211> LENGTH: 60
143 <212> TYPE: DNA
144 <213> ORGANISM: Artificial Sequence
146 <220> FEATURE:
147 <223> OTHER INFORMATION: PCR primer
149 <400> SEQUENCE: 11
150 gagtccaaat atggtccccc atgccaccca tgcccagcac ctgagttcgc ggggggacca      60
153 <210> SEQ ID NO: 12
154 <211> LENGTH: 70
155 <212> TYPE: DNA
156 <213> ORGANISM: Artificial Sequence
158 <220> FEATURE:
159 <223> OTHER INFORMATION: PCR primer
161 <400> SEQUENCE: 12
162 cggatccggt ggcggttccg gtggaggcgg aagcggcggg ggaggatcag agtccaaata      60
164 tgggtccccc                                70
167 <210> SEQ ID NO: 13
168 <211> LENGTH: 21
169 <212> TYPE: DNA
170 <213> ORGANISM: Artificial Sequence
172 <220> FEATURE:
173 <223> OTHER INFORMATION: PCR primer
175 <400> SEQUENCE: 13
176 gacaaaactc acacatgccc a                                21
179 <210> SEQ ID NO: 14
180 <211> LENGTH: 23
181 <212> TYPE: DNA
182 <213> ORGANISM: Artificial Sequence
184 <220> FEATURE:
185 <223> OTHER INFORMATION: PCR primer
187 <400> SEQUENCE: 14
188 acctgaagtc gcggggggac cgt                                23
191 <210> SEQ ID NO: 15
192 <211> LENGTH: 55
193 <212> TYPE: DNA
194 <213> ORGANISM: Artificial Sequence
196 <220> FEATURE:
197 <223> OTHER INFORMATION: PCR primer
199 <400> SEQUENCE: 15
200 gacaaaactc acacatgccc accgtgccc gacacctgaag tcgcgggggg accgt      55
203 <210> SEQ ID NO: 16
204 <211> LENGTH: 70
205 <212> TYPE: DNA
206 <213> ORGANISM: Artificial Sequence
208 <220> FEATURE:
209 <223> OTHER INFORMATION: PCR primer
211 <400> SEQUENCE: 16
212 cggatccggt ggcggttccg gtggaggcgg aagcggcggg ggaggatcag acaaaaactca      60
214 cacatgccc                                70

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Input Set : A:\EP.txt

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217 <210> SEQ ID NO: 17
 218 <211> LENGTH: 1332
 219 <212> TYPE: DNA
 220 <213> ORGANISM: Artificial Sequence
 222 <220> FEATURE:
 223 <223> OTHER INFORMATION: HuEPO-L-vFc gamma2 (Figure 2A)
 225 <400> SEQUENCE: 17

226	aagcttggcg	cggagatggg	ggtgcacgaa	tgtcctgcct	ggctgtggct	tctcctgtcc	60
228	ctgctgtcgc	tccctctggg	cctcccagtc	ctgggcgccc	caccacgcct	catctgtgac	120
230	agccgagtc	tggagaggta	cctcttggag	gccaaggagg	ccgagaatat	cacgacgggc	180
232	tgtgtgaac	actgcagctt	gaatgagaat	atcactgtcc	cagacaccaa	agttaatttc	240
234	tatgcctgga	agaggatgga	ggtcgggcag	caggccgtag	aagtctggca	gggcctggcc	300
236	ctgctgtcgc	aagctgtcct	gcggggccag	gccctgttgg	tcaactcttc	ccagccgtgg	360
238	gagccctgc	agctgcatgt	ggataaagcc	gtcagtggcc	ttcgcagcct	caccactctg	420
240	cttcgggctc	tgggagccca	gaaggaagcc	atctcccctc	cagatgcggc	ctcagctgct	480
242	ccactccgaa	caatcactgc	tgacactttc	cgaaactct	tccgagtcta	ctccaatttc	540
244	ctccggggaa	agctgaagct	gtacacaggg	gaggcctgca	ggacagggga	cggatccggt	600
246	ggcggttccg	gtggaggcgg	aagcggcggt	ggaggatcag	agcgcaaatg	ttgtgtcgag	660
248	tgcccaccgt	gcccagcacc	acctgtggca	ggaccgtcag	tcttctctt	ccccccaaaa	720
250	cccaaggaca	ccctcatgat	ctcccgagcc	cctgaggcca	cgtgcgtggg	ggtggacgtg	780
252	agccacgaag	accccgaggt	ccagttcaac	tggtagctgg	acggcgtgga	ggtgcataat	840
254	gccaagacaa	agccacggga	ggagcagttc	aacagcacgt	tccgtgtggg	cagcgtcttc	900
256	accgttgtgc	accaggactg	gctgaacggc	aaggagtaca	agtgaagggt	ctccaacaaa	960
258	ggcctcccag	cctccatcga	gaaaaccatc	tccaaaacca	aagggcagcc	ccgagaacca	1020
260	caggtgtaca	ccctgcccc	atcccgggag	gagatgacca	agaaccaggt	cagcctgacc	1080
262	tgctgtgtca	aaggttctta	ccccagcgac	atcgccgtgg	agtgggagag	caatgggcag	1140
264	ccggagaaca	actacaagac	cacacctccc	atgctggact	ccgacggctc	cttcttcctc	1200
266	tacagcaagc	tcaccgtgga	caagagcagg	tggcagcagg	ggaacgtctt	ctcatgctcc	1260
268	gtgatgcatg	aggctctgca	caaccactac	acgcagaaga	gcctctccct	gtctccgggt	1320
270	aaatgagaat	tc					1332

273 <210> SEQ ID NO: 18
 274 <211> LENGTH: 436
 275 <212> TYPE: PRT
 276 <213> ORGANISM: Artificial Sequence
 278 <220> FEATURE:
 279 <223> OTHER INFORMATION: HuEPO-L-vFc gamma2 with a 27-amino acid leader peptide

(Figure 2

280 A)
 282 <400> SEQUENCE: 18

284	Met	Gly	Val	His	Glu	Cys	Pro	Ala	Trp	Leu	Trp	Leu	Leu	Leu	Ser	Leu
285	1				5					10					15	
288	Leu	Ser	Leu	Pro	Leu	Gly	Leu	Pro	Val	Leu	Gly	Ala	Pro	Pro	Arg	Leu
289				20					25						30	
292	Ile	Cys	Asp	Ser	Arg	Val	Leu	Glu	Arg	Tyr	Leu	Leu	Glu	Ala	Lys	Glu
293			35					40					45			
296	Ala	Glu	Asn	Ile	Thr	Thr	Gly	Cys	Ala	Glu	His	Cys	Ser	Leu	Asn	Glu
297		50					55					60				
300	Asn	Ile	Thr	Val	Pro	Asp	Thr	Lys	Val	Asn	Phe	Tyr	Ala	Trp	Lys	Arg
301	65					70				75					80	
304	Met	Glu	Val	Gly	Gln	Gln	Ala	Val	Glu	Val	Trp	Gln	Gly	Leu	Ala	Leu

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```

305          85          90          95
308 Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
309          100          105          110
312 Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
313          115          120          125
316 Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
317          130          135          140
320 Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
321 145          150          155          160
324 Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
325          165          170          175
328 Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
329          180          185          190
332 Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
333          195          200          205
336 Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val
337          210          215          220
340 Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
341 225          230          235          240
344 Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
345          245          250          255
348 His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu
349          260          265          270
352 Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr
353          275          280          285
356 Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn
357          290          295          300
360 Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Ser
361 305          310          315          320
364 Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln
365          325          330          335
368 Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
369          340          345          350
372 Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
373          355          360          365
376 Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
377          370          375          380
380 Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
381 385          390          395          400
384 Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
385          405          410          415
388 Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
389          420          425          430
392 Ser Pro Gly Lys
393          435
396 <210> SEQ ID NO: 19
397 <211> LENGTH: 1335
398 <212> TYPE: DNA
399 <213> ORGANISM: Artificial Sequence

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RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/932,812A

DATE: 04/24/2003
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Input Set : A:\EP.txt

Output Set: N:\CRF4\04242003\I932812A.raw

Use of <220> Feature (NEW RULES):

Sequence(s) __ are missing the <220> Feature and associated headings.

Use of <220> to <223> is MANDATORY if <213> ORGANISM is "Artificial Sequence" or "Unknown". Please explain source of genetic material in <220> to <223> section (See "Federal Register," 6/01/98, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of new Rules)

Seq#:23

↑
move explanation of sequence from <213> response to <223> line

VERIFICATION SUMMARYPATENT APPLICATION: **US/09/932,812A**

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Input Set : **A:\EP.txt**Output Set: **N:\CRF4\04242003\I932812A.raw**

L:759 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:23, <213>
ORGANISM:Artificial sequence, 16-amino acid peptide linker
L:759 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:23, <213>
ORGANISM:Artificial sequence, 16-amino acid peptide linker
L:759 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:23,Line#:759